Type
JMH 100 / JMH 200

No 360° images found.

Payload (KG)
1000 Kgs (1 Ton) / 2000 Kgs (2 Ton)

Material Hoist for Construction Sites | Rack & Pinion Vertical Lifting by Jaypee®

Overview

A **material hoist** is a rack-and-pinion vertical lifting system engineered to transport construction materials—concrete, steel, bricks, lumber, tools, and equipment—between ground level and upper floors of a building under construction. Jaypee® material hoists are CE-certified and purpose-built for Indian and international construction environments, delivering load capacities from 1,000 kg to 8,000 kg and maximum lifting heights up to 450 meters.

Whether you are managing a high-rise residential tower, a large commercial complex, or a major

infrastructure project, a Jaypee® material hoist eliminates costly manual material handling, reduces on-site injuries, and keeps your project on schedule.

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What Is a Material Hoist?

A material hoist—also called a construction goods hoist, builder hoist, tower hoist, or rack and pinion goods lift — is a temporary vertical transport system installed on a building's outer face during construction. It uses a motor-driven pinion gear traveling along a toothed steel rack fixed to a modular mast structure, lifting heavy construction materials at controlled speeds under demanding site conditions.

Unlike a permanent goods elevator, a material hoist is modular, installs rapidly as the building rises, and is fully dismantled and reused once the project is complete. It is the industry-standard solution for heavy material transport on any multi-storey construction project.

A material hoist is exclusively for lifting materials. Workers must never ride in a material-only hoist. If your project requires both worker and material transport, Jaypee® also manufactures dedicated Passenger Hoistsand combinedConstruction Passenger & Material Hoists.

Key functions of a material hoist on a construction site:

- Lifts concrete, steel reinforcement bars, bricks, tiles, and heavy construction materials vertically
- Carries tools, equipment, and finishing materials to active floors simultaneously
- Operates continuously across all construction shifts without performance degradation
- Eliminates manual carrying of heavy loads on scaffolding and staircases
- Reduces material wastage and breakage caused by manual vertical handling
- Supports project timelines by cutting material transit time by up to 80%

Jaypee® Material Hoist Models — JMH and JBH Series

Jaypee® manufactures two core material hoist series covering light residential construction through heavy-duty infrastructure and industrial projects.

JMH Series — Rack & Pinion Material Hoist

The JMH series is Jaypee's flagship rack and pinion material hoist range, engineered for sustained heavy-duty material lifting on mid-rise to high-rise construction sites.

JMH 100 — 1000 kg Material Hoist

- Load capacity: 1,000 kg
- Lifting speed: 0–36 m/min
- Maximum height: 200 m
- Mast section: 450 × 450 × 1508 mm
- Motor power: 11 kW
- Drive system: Rack and pinion with VFD control
- Safety device: Anti-fall centrifugal governor

JMH 200—2000 kg Material Hoist

- Load capacity: 2,000 kg
- Lifting speed: 0–36 m/min
- Maximum height: 300 m
- Mast section: 450 × 450 × 1508 mm
- Motor power: 22 kW
- Drive system: Rack and pinion with VFD control
- Safety device: Anti-fall centrifugal governor

JMH 300—3000 kg Material Hoist

- Load capacity: 3,000 kg
- Lifting speed: 0–33 m/min
- Mast section: 650 × 650 × 1508 mm
- Maximum height: 400 m
- Motor power: 37 kW
- Drive system: Rack and pinion with VFD control
- Safety device: Anti-fall centrifugal governor

JMH 500—5000 kg Material Hoist

- Load capacity: 5,000 kg
- Lifting speed: 0–30 m/min
- Maximum height: 450 m
- Mast section: 650 × 650 × 1508 mm
- Motor power: 55 kW
- Drive system: Rack and pinion with VFD control
- Safety device: Anti-fall centrifugal governor

JMH 800—8000 kg Material Hoist

- Load capacity: 8,000 kg
- Lifting speed: 0–24 m/min
- Maximum height: 450 m
- Mast section: 650 × 650 × 1508 mm
- Motor power: 75 kW
- Drive system: Rack and pinion with VFD control
- Safety device: Anti-fall centrifugal governor

JBH Series — Builder Hoist / Tower Hoist

The JBH series is Jaypee's builder hoist range, designed for smaller residential and low-rise commercial construction sites where a compact, cost-effective material lifting solution is required.

JBH 100—1000 kg Builder Hoist

- Load capacity: 1,000 kg
- Maximum height: 125 m
- Mast section: Square mast, 3 m sections
- Platform: Heavy-duty MS trolley
- Drive: Electric motor with gearbox
- Best for: Low to mid-rise residential construction

JBH 200—2000 kg Builder Hoist

- Load capacity: 2,000 kg
- Maximum height: 125 m
- Mast section: Square mast, 3 m sections
- Platform: Heavy-duty MS trolley
- Drive: Electric motor with gearbox
- Best for: Mid-rise residential and commercial projects

Key Features of Jaypee® Material Hoists

Variable Frequency Drive (VFD) Control

All JMH series material hoists feature VFD step-less speed control from 0 to 36 m/min. VFD eliminates load jerk on start and stop — critical when lifting fragile materials like glass panels, ceramic tiles, and prefabricated elements. It reduces mechanical wear across the drive system and extends the service life of the rack, pinion, and gearbox significantly.

PLC Safety Automation

A Programmable Logic Controller monitors every operational parameter continuously — overload detection, overspeed, door interlock, upper and lower limit switches, and floor position. When any parameter is breached, the PLC triggers an automatic safety shutdown before human intervention is possible. This prevents load drop accidents caused by operator error on busy construction sites.

Anti-Fall Centrifugal Safety Device

Every Jaypee® material hoist is equipped with a centrifugal anti-fall safety device. If the cage descent speed exceeds the rated limit due to rope or drive failure, the governor engages the mechanical emergency brake, stopping the loaded cage within a defined distance regardless of electrical power status. This is a non-negotiable safety requirement for any rack and pinion material hoist operating at height.

CE Certified and IS Compliant

All Jaypee® material hoist models carry full CE certification, meeting European Machinery Directive 2006/42/EC safety requirements. CE compliance requires third-party testing of the anti-fall device, overspeed governor, structural load performance, and all safety interlock systems. CE-certified material hoists are accepted by premium project consultants and government contractors across India and internationally.

Hot-Dip Galvanised Mast Sections

Mast sections are hot-dip galvanised rather than painted. Galvanisation penetrates the steel surface rather than coating it, providing corrosion resistance against monsoon rain, coastal humidity, and on-site chemical exposure that painted sections cannot match over an 18–24 month project duration.

Maximum Lifting Height — 450 Metres

Modular mast sections allow the material hoist to grow with the building. Additional sections are bolted on as construction progresses vertically — no need to replace the base unit. Jaypee® material hoists reach a maximum lifting height of 450 metres, covering India’s tallest infrastructure and high-rise projects.

Overload Limiter System

Jaypee® material hoists include electronic overload limiters that prevent the hoist from operating when the loaded cage exceeds the rated capacity. This protects the drive system, mast structure, and anti-fall device from the cumulative damage caused by repeated overloading — one of the most common causes of material hoist failure on Indian construction sites.

Stainless Steel Electrical Cabinets

All electrical enclosures are stainless steel with IP-rated protection. On outdoor construction sites, standard powder-coated cabinets corrode within months in monsoon conditions. Stainless steel enclosures maintain their protection rating throughout the project lifespan without degradation.

Self-Erecting Mechanism

Jaypee® JBH series builder hoists feature a self-erecting mechanism that allows installation without a separate crane or heavy lifting equipment. This reduces installation cost and time significantly on smaller sites where crane availability is limited.

Low Energy Consumption

Jaypee® material hoists use low-energy-consuming geared motors optimised for the duty cycle of construction material lifting. On sites where the hoist runs across two or three shifts daily for 18–24 months, energy efficiency directly impacts project operating costs.

Material Hoist vs Passenger Hoist — Key Differences

This is the most important distinction for project managers specifying vertical transport for a new construction project.

A **material hoist** is designed and certified exclusively for lifting construction materials. It does not have a passenger-certified enclosed cabin, and workers are strictly prohibited from riding in a material-only hoist under any circumstances. Material hoists are built for heavier loads, slower speeds, and continuous duty material handling cycles.

A **passenger hoist** is designed and certified specifically for carrying construction workers. It has an enclosed, reinforced cabin with anti-slip flooring, interior lighting, handrails, and safety systems tested to passenger-carrying standards. Workers can ride safely in a passenger hoist at all times.

A **construction passenger and material hoist** is a dual-rated unit certified for both workers and materials simultaneously, subject to combined weight limits.

Feature	Material Hoist	Passenger Hoist
Workers allowed	No	Yes
Materials allowed	Yes	Yes (within capacity)
Max load capacity	Up to 8,000 kg	Up to 2,000 kg
Enclosed cabin	Optional	Always
Safety certification	CE goods standard	CE passenger standard
Speed	Up to 36 m/min	Up to 96 m/min
Best for	Heavy material lifting	Worker transport
Cost	Lower	Higher

If your site requires worker transport in addition to material lifting, see our dedicated Passenger Hoist page or our Construction Passenger & Material Hoist range.

Applications of Material Hoists in Construction

Jaypee® material hoists are deployed across every segment of Indian and international construction:

High-Rise Residential Construction — Lifting concrete blocks, steel reinforcement, plumbing and electrical materials, interior finishing materials, and heavy tools across 20–60+ storey towers where manual carrying is impossible and crane time is too expensive.

Commercial Building Projects — Office towers, hotels, shopping malls, and mixed-use developments require continuous heavy material transport across multiple active floors during structural, MEP, and finishing phases.

Infrastructure Development — Bridges, flyovers, metro rail viaducts, and large civil structures require lifting formwork, steel sections, and construction materials at heights where conventional crane access is restricted.

Industrial Plant Construction — Refineries, power plants, cement plants, and manufacturing facilities involve lifting heavy plant equipment, piping, and structural steel at elevation where material hoists provide the most cost-effective vertical access.

Renovation and Refurbishment — Large-scale renovation of existing buildings requires lifting demolition waste downward and new materials upward — a material hoist provides the safest, most efficient solution without damaging existing structure.

Bridge and Chimney Construction — Jaypee® manufactures a specialised Chimney Hoist for narrow vertical structures, with the JMH series covering general bridge and tower material lifting requirements.

Material Hoist Installation Process

A Jaypee® material hoist installation follows a structured process managed by trained Jaypee® engineers:

Site Survey and Foundation Design — Jaypee® engineers survey the site to determine base positioning, foundation load requirements, drainage, and mast anchor points. The base must be positioned on firm, level ground rated for the loaded hoist weight.

Base Frame and Initial Mast Erection — The base frame is levelled, anchored, and the initial mast sections are erected. Correct base levelling is critical — misalignment at the base multiplies at height.

Platform and Drive Unit Assembly — The material platform or cage, motor, gearbox, and rack-and-pinion drive unit are assembled and connected. The VFD control panel is commissioned and all safety devices are tested.

Wall Tie Installation — Mast wall ties are installed at regular intervals — typically every 6 metres — as the mast rises. Ties must be anchored to the structural frame only.

Progressive Mast Climbing — As construction proceeds floor by floor, additional mast sections are bolted on from the top of the existing mast. A trained rigger adds sections progressively — typically one to two sections per day.

Pre-Commissioning Load Test — Before first use, Jaypee® engineers conduct a full pre-commissioning test: load test at 110% rated capacity, anti-fall device test, overspeed governor test, limit switch tests, and overload limiter calibration.

Why Contractors Across India Choose Jaypee® Material Hoists

Manufacturer-Direct Supply — Jaypee® India Limited manufactures every hoist component. When you buy directly from Jaypee®, you receive manufacturer pricing, direct technical support, and engineering customisation that distributors cannot provide.

42 Years of Manufacturing Experience — Jaypee® has been manufacturing construction hoisting equipment for over four decades, with hundreds of material hoist installations across India's residential, commercial, and infrastructure sectors.

Pan-India Service Network — Fast-response Jaypee® service teams and genuine spare parts are available across all major Indian cities including Kolkata, Delhi, Mumbai, Chennai, Hyderabad, and Bengaluru. Material hoist downtime is a project emergency — Jaypee's network resolves issues in hours, not days.

ISO-Compliant, CE-Certified Manufacturing — Every Jaypee® material hoist is manufactured under ISO-compliant processes, tested before dispatch, and CE certified. This is the standard required by premium project consultants and government-tendered contracts.

Full After-Sales AMC Support — Jaypee® offers Annual Maintenance Contracts covering all scheduled preventive maintenance, emergency response, and genuine parts availability for the full project duration.

Material Hoist Safety Standards

Jaypee® material hoists comply with the following safety standards:

CE Certification — European conformity marking confirming compliance with EU Machinery Directive 2006/42/EC.

IS 7521 (Bureau of Indian Standards) — Indian standard for construction hoists covering design, manufacture, installation, inspection, and maintenance.

ISO 16368 — International standard for construction hoists specifying safety requirements for design, calculations, stability, construction, examination, and testing.

Anti-Fall Safety Device — Every Jaypee® material hoist carries a centrifugal anti-fall governor tested and certified to stop the loaded cage within a defined distance in the event of drive failure.

Frequently Asked Questions — Material Hoist

What is a material hoist used for?

A material hoist is used to lift construction materials — concrete, steel, bricks, tiles, lumber, tools, and equipment — vertically between ground level and upper floors of a building under construction. It is a temporary rack-and-pinion vertical transport system that is dismantled and reused after project completion.

Can workers ride in a material hoist?

No. A material hoist is certified for lifting materials only. Workers must never ride in a material-only hoist. If you need to transport both workers and materials, Jaypee® manufactures dedicated passenger hoists and combined passenger and material hoists.

What is the maximum load capacity of a Jaypee® material hoist?

Jaypee® material hoists are available in capacities from 1,000 kg (JMH 100) up to 8,000 kg (JMH 800), making them suitable for everything from light residential material lifting to heavy industrial construction.

What is the maximum height a material hoist can reach?

Jaypee® rack and pinion material hoists reach a maximum lifting height of 450 metres using modular bolted mast sections that are added progressively as the building rises.

What is the difference between a material hoist and a builder hoist?

A rack and pinion material hoist uses a motorised pinion gear on a toothed mast rack for precise, high-capacity vertical lifting and is suited for mid to high-rise projects. A builder hoist or tower hoist uses a wire rope and pulley system on a simple mast tower, suited for low-rise residential construction with lighter loads and lower heights.

What is the difference between a material hoist and a tower crane?

A tower crane lifts materials horizontally and vertically across large distances and is suited for placing heavy structural elements. A material hoist lifts materials vertically only, along the face of the building, at a far lower cost per tonne lifted. For floor-by-floor material distribution, a material hoist is significantly more cost-effective than crane time.

How long does it take to install a material hoist?

A standard Jaypee® material hoist base installation up to the first 30 metres is completed in 2 to 3 days by a trained installation team. Additional mast sections are added progressively — typically one to two sections per day — as construction proceeds.

What routine maintenance does a material hoist require?

Daily visual inspection of the platform, rack, mast, and safety devices. Weekly lubrication of rack, pinion, and guide rollers. Monthly electrical panel and gearbox inspection. Annual full structural inspection and anti-fall device recertification. Jaypee® offers AMC contracts covering all scheduled maintenance.

What is the price of a material hoist in India?

Material hoist pricing depends on the model (JMH 100 to JMH 800 or JBH series), load capacity, maximum lifting height, and site-specific requirements. Jaypee® provides manufacturer-direct quotations with no distributor markups. Contact Jaypee® for a customised price based on your project specification.

Are Jaypee® material hoists CE certified?

Yes. All Jaypee® material hoist models carry full CE certification confirming compliance with European Machinery Directive safety requirements. This certification is verified by third-party testing of structural capacity, anti-fall device, overspeed governor, and all safety interlock systems.

Related Jaypee® Products

- Passenger Hoist — CE certified worker transport, 700–2000 kg, up to 450m
- Construction Passenger & Material Hoist — Dual rated for workers and heavy materials simultaneously
- Inside Lift Shaft Hoist — For permanent shaft and interior vertical access installations
- Chimney Hoist — Purpose-built for narrow chimney and tower structures
- Industrial Rack & Pinion Elevators — For permanent industrial plant vertical access

Get a Free Consultation for Your Material Hoist Project

Jaypee® engineers provide free site consultations for all material hoist projects. Whether you need guidance on model selection, load capacity, installation planning, or a competitive quotation, our team responds within 24 hours.

Contact Jaypee® India Limited:

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Frequently Asked Questions

What is the maximum height Jaypee® material hoists can reach?

Jaypee® hoists can reach heights up to 450 meters, depending on the model.

Can the hoist be customized for specific site needs?

How often should maintenance be performed on the hoist?

Are safety features included with the hoist?

What is the typical loading capacity for Jaypee® material hoists?

Benefits & Features

Our Products are assembled in the following categories

- Electromagnetic Brake Motor
- Top & Bottom Stopper Limit Switch
- Extreme Up & Down Speed Control Limit Switch
- Safe Travel Limit Switch
- Cage Door Electrical Interlocking
- Wireless Remote Operating Facility

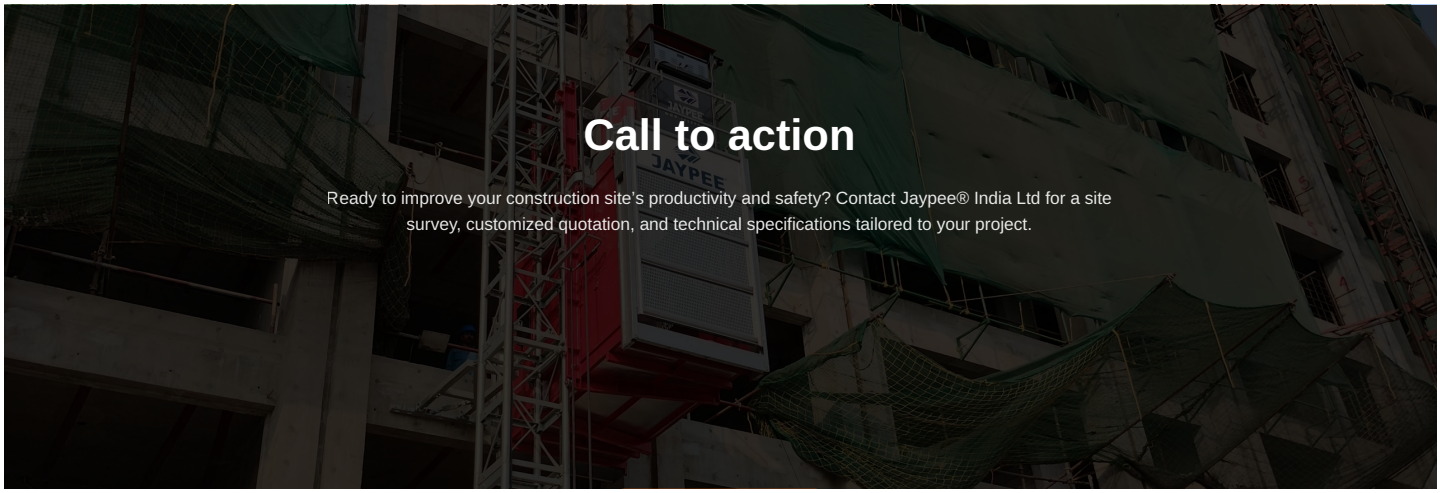
Technical Data

JMH 100	
Loading Capacity	1000 Kgs (1 Ton)
Max Height	300 Mtr.
Cage Size (L x B x H)	2000 x 1200 x 2000 mm
Lifting Speed	36 Meters/Min.
Travel Type	Rack & Pinion
Power Transmission	Geared Motor
Motor Power	12.5 HP (9.3kw) X 2
Cage, Mast & Wall Ties	Shoot Blasted, Zinc Chromate Primer & High Quality Enamel Paint, Zinc Plating or Galvanized
Self Erecting Mechanism	Included
Safety Features	Electromagnetic Brake Motor, Centrifugal Freefall Arrester, Top & Bottom Stopper Limit Switch, Travel Limit Switch, Cage Door Electrical Interlocking, Overload Safety
Optional Attatchment	Concrete Bucket – 0.4 cu/-1 ton , Horizontal Rebar Attachment upto 6 Mtr. long
Optional Features	FC Drive

JMH 200	
Loading Capacity	2000 Kgs (2 Ton)
Max Height	450 Mtr.
Cage Size (L x B x H)	2000 x 1200 x 2000 mm
Lifting Speed	36 Meters/Min.
Travel Type	Rack & Pinion
Power Transmission	Geared Motor
Motor Power	12.5 HP (9.3kw) X 3
Cage, Mast & Wall Ties	Shoot Blasted, Zinc Chromate Primer & High Quality Enamel Paint, Zinc Plating or Galvanized
Self Erecting Mechanism	Included
Safety Features	Electromagnetic Brake Motor, Centrifugal Freefall Arrester, Top & Bottom Stopper Limit Switch, Travel Limit Switch, Cage Door Electrical Interlocking, Overload Safety
Optional Attatchment	Concrete Bucket – 0.4 cu/-1 ton , Horizontal Rebar Attachment upto 6 Mtr. long
Optional Features	FC Drive

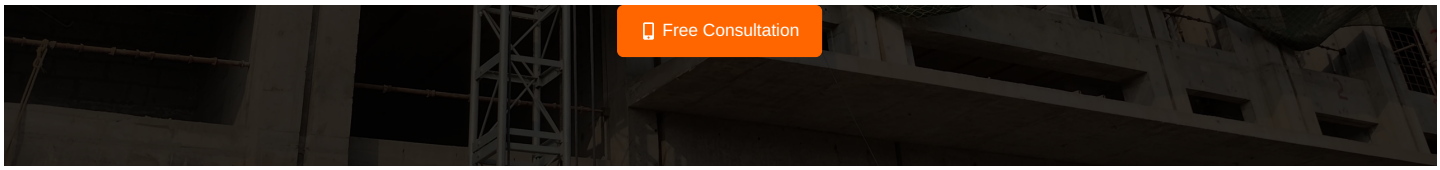
Conclusion

Jaypee®'s Rack & Pinion Material Hoists are designed to provide reliable, safe, and efficient vertical material transport across construction sites. With a strong focus on durability, safety, and ease of use, these hoists ensure that construction projects run smoothly and on time.



Call to action

Ready to improve your construction site's productivity and safety? Contact Jaypee® India Ltd for a site survey, customized quotation, and technical specifications tailored to your project.



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